

Application No. 10/711,129  
Technology Center 2886  
Amendment dated January 24, 2008  
Reply to Office Action dated September 24, 2007

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**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

Claim 1 (Currently amended): A self-calibrating optical reflectance probe system comprising:

an illuminant light source for illuminating a sample material;

optical pickup means for collecting reflected light from the sample material; and

an articulated white reference reflection standard adapted to generate a white reference signal for calibration of the optical reflectance probe system when articulated to a position for ~~as an illuminant reference by~~ reflecting light from the illuminant light source to the optical pickup means.

Claim 2 (Original): The self-calibrating optical reflectance probe system according to claim 1, wherein the illuminant light source comprises multiple illuminant light sources for redundancy.

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Claim 3 (Original): The self-calibrating optical reflectance probe system according to claim 1, wherein the optical pickup means comprises multiple optical pickup fibers for diversity in reflected light detection.

Claim 4 (Original): The self-calibrating optical reflectance probe system according to claim 1, the probe system further comprising an optical line source adapted for wavelength calibration and verification.

Claim 5 (Original): The self-calibrating optical reflectance probe system according to claim 1, the probe system further comprising an articulated spectral reference standard for dynamic range verification.

Claim 6 (Original): The self-calibrating optical reflectance probe system according to claim 1, the probe system further comprising an articulated transmissive filter for dynamic range measurement and/or wavelength calibration and verification.

Claim 7 (Currently amended): The self-calibrating optical reflectance probe system according to claim 1, the probe system further comprising a shutter adapted to generate a dark reference signal for

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calibration of the optical reflectance probe system by shuttering the illuminant light source. ~~an articulated shutter for dark reference.~~

Claim 8 (Original): The self-calibrating optical reflectance probe system according to claim 1, the probe system further comprising a window through which light passes from the illuminant light source, the window being curved to reduce reflected light from the window surface.

Claim 9 (Original): The self-calibrating optical reflectance probe system according to claim 1, the probe system further comprising a mount employing a single sanitary pipe fitting and clamp.

Claim 10 (Currently amended): A self-calibrating optical reflectance probe system comprising:

- an illuminant light source for illuminating a sample material;
- optical pickup means for collecting reflected light from the sample material;
- an optical line source adapted for performing wavelength calibration and verification;
- a window through which light passes from the illuminant light source,

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the window being curved to reduce reflected light from the window surface;  
a white reference reflection standard adapted for use as an  
illuminant reference; and

means for articulating the white reference standard into and out of an  
optical path through the probe system, wherein a white reference signal is  
generated for calibration of the optical reflectance probe system when the  
white reference standard is articulated into the optical path so as to be  
illuminated by the illuminant light source and reflect light to the optical pickup  
means.

Claim 11 (Original): The self-calibrating optical reflectance probe  
system according to claim 10, wherein the illuminant light source comprises  
multiple illuminant light sources for redundancy.

Claim 12 (Original): The self-calibrating optical reflectance probe  
system according to claim 10, wherein the optical pickup means comprises  
multiple optical pickup fibers for diversity in reflected light detection.

Claim 13 (Original): The self-calibrating optical reflectance probe  
system according to claim 10, the probe system further comprising an

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articulated spectral reference standard for dynamic range verification and/or wavelength calibration and verification.

Claim 14 (Original): The self-calibrating optical reflectance probe system according to claim 10, the probe system further comprising an articulated transmissive filter for dynamic range measurement and/or wavelength calibration and verification.

Claim 15 (Currently amended): The self-calibrating optical reflectance probe system according to claim 10, the probe system further comprising a shutter adapted to generate a dark reference signal for calibration of the optical reflectance probe system by shuttering the illuminant light source. ~~an articulated shutter for dark reference.~~

Claim 16 (Original): The self-calibrating optical reflectance probe system according to claim 10, the probe system further comprising a mount employing a single sanitary pipe fitting and clamp.

Claims 17 through 20 (Canceled)